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(19)(CA) **APPLICATION FOR CANADIAN PATENT** (12)

(54) Indicating Sign for Motor Vehicles

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(73) Same as inventor

(57) 14 Claims

Abstract

An indicating sign for attachment on the roof of a motor vehicle, consisting of a closed box with indicating symbols and/or indicating inscriptions such as "Taxi", "Police" or the like.

For reducing its air resistance and for ensuring at the same time the visibility of the information provided thereon from all sides, the box is designed in the shape of a pyramid.

The invention relates to an indicating sign for attachment on the roof of a motor vehicle, consisting of a closed box with indicating symbols and/or indicating inscriptions such as "Taxi", "Police" or the like.

In a known illuminated sign box for attachment on the vehicle roof, which comprises a beam-like illuminated sign that can be integrated therein and has indicating symbols or indicating inscriptions, said illuminated sign has a configuration which is curved in roof-like manner, with two parallel rectilinear lower edges and two also parallel, but curved side edges. It may have a constant cross-section corresponding to the shape of the side edges and having preferably the form of a parabola. The illuminated sign box itself can be clamped, in the manner of a roof rack or carrier, in the two drains extending in the longitudinal direction of the vehicle.

The construction of the illuminated sign box and the attachment thereof to the vehicle roof are such that the ingress of water between roof and carrier as well as between carrier and illuminated sign can be prevented. This measure, as well as the curved configuration of the surface of illuminated sign and box, is to render possible that brush rolls can be moved across the illuminated sign box when the vehicle is cleaned in an automatic car wash.

Although this suggested configuration of the illuminated sign box, in terms of aerodynamics, seems to be clearly better than that of prior illuminated signs with square configuration, the air resistance of this illuminated sign box according to this proposal, especially at highway speeds, nevertheless is not negligible. A further disadvantage of the illuminated sign box mentioned, which is significant in terms of advertising, is that the necessary information can be applied only to the front and rear sides thereof and, thus, can be read only from the driving direction or from the opposite direction. Furthermore, mounting and demounting of the illuminated sign box in

question, necessitating each time tightening and untightening, respectively, of gripping claws by means of screws, also is somewhat troublesome.

The object to be met by the invention is to provide an indicating sign for vehicles, in which the disadvantages of known signs are avoided. It is to have a configuration which is advantageous in terms of aerodynamics, while having at the same time a good advertising effect. A further effect to be achieved is that handling of the indicating sign during attachment thereof on the vehicle roof as well as detachment thereof is facilitated and can be carried out as fast as possible. This object is met according to the invention by the design feature of the characterizing part of claim 1.

Due to its wedge-like configuration, the subject matter of the invention presents to the air stream a considerably lower resistance than a beam-like illuminated sign box having a length located transversely to the air stream that corresponds to the vehicle width. The three side faces of the pyramid-shaped box, which extend obliquely upwardly, render possible that the information provided therein can be seen from all sides.

Features of a particularly advantageous development of the invention are subject matter of the dependent claims 2 to 13.

The invention will be elucidated in more detail by way of example in the form of preferred embodiments shown in the drawings, in which

Figure 1 shows a side view of an embodiment of an indicating sign for motor vehicles according to the invention in the operative position on the roof of a motor vehicle, which is partly cut away;

Figure 2 shows a top plan view of the indicating sign according to Figure 1;

Figure 3 shows a bottom view of the indicating sign according to Figures 1 and 2;

Figure 4 shows a bottom view of a further embodiment of an indicating sign for motor vehicles according to the invention;

Figure 5 shows a side view of the indicating sign according to Figure 4 in the operative position on the roof of a motor vehicle, which is partly cut away; and

Figure 6 shows a sectional view of a part of the indicating sign according to Figures 4 and 5, along the sectional plane A-A.

The indicating sign for attachment on the roof of a motor vehicle, as illustrated in Figures 1 to 6, is in the form of a closed box which may be provided with indicating symbols and/or indicating inscriptions such as, for instance, "Taxi", "Police" or the like. According to the invention, the box 1 has the shape of a pyramid. This relatively simple shape which is advantageous in terms of aerodynamics and, thus, fuel-saving, at the same time has the effect that the information provided thereon is visible from all sides. An indicating inscription 4 is provided on each of the obliquely upwardly extending side faces 2 of the box 1 facing with its base area 3 the vehicle roof D in its operative position. Within the outlines of said inscriptions, the side faces 2 are translucent, and in the interior of the box there is at least one light source, so that the visibility of the indication is ensured also in the dark.

The pyramid-shaped box 1 has, in a particularly advantageous manner, an asymmetrical configuration with a markedly wedge-like profile as seen transversely of the driving direction F of the vehicle. The edge 6 of the box 1, which in the operative position is oriented in driving direction F and extends obliquely upwardly to the pyramid

vertex 5, is longer than the two other box edges 7, 8 which also meet in the pyramid vertex 5.

The base area of the pyramid-shaped box 1 need not necessarily have the form of a triangle. An advantageous configuration of the box 1 as regards the aerodynamics as well as the visibility of the information provided thereon from all sides is also ensured, for instance, with a pyramid having a quadrangular base area, in particular when the edges facing in driving direction are longer than the two other edges.

Mounting of the box 1 on the vehicle roof D can be effected in an especially expedient manner magnetically, with a gap s being left between the base area 3 of the box and the surface of the roof. Figures 1 and 3 illustrate a passible embodiment of the mounting means 9. The mounting means 9 is provided in the form of a carrier 10 having, in plan view, a double-T-configuration. It advantageously comprises a connecting beam 11 which is designed as a torsion bar and which is mounted on the side of the base area 3 of the box 1 facing the vehicle roof D. It is advisable to provide one permanent magnet 12 each on all four ends of the double-T-carrier 10.

A further embodiment of the mounting means 9 is illustrated in Figures 4 to 6.

In this embodiment, mounting takes place by means of three permanent magnets 112 only, which are disposed on two rails 113,114 in linearly slidable manner. The rails, in turn, are mounted on the triangular, planar base area 3 of the box 1, which faces the vehicle roof D, in such a manner that one rail, namely the shorter rail 113, extends in driving direction F of the vehicle to a location near the corner of the base area 3 facing in the same direction. The shorter rail 113 holds one permanent magnet 112. The other, longer rail 114 extends at right angles to the shorter rail 113 and at the same time parallel to the, as seen in driving

direction F, rear side edge of the base area 3 between the two laterally directed corners of the latter and carries two permanent magnets 112.

This arrangement of the rails 113,114 is advantageous, but other arrangement possibilities are conceivable as well.

The length of the rails 113,114 must be dimensioned such that mounting of the indicating sign in a manner so that the base area of the pyramid-shaped box 1 always assumes a substantially horizontal position, is also possible on vehicles having a so-called sunshine roof or having a roof provided with ribs R. Permanent magnets 112 of circular-cylindrical configuration are particularly advantageous for mounting the box 1 on a vehicle roof D.

The following measures are indicated as an exemplary embodiment:

length of shorter rail 113:	L_1	=	350 mm
length of longer rail 114:	L_2	=	650 mm
diameter of permanent magents 112:	d	=	100 mm
adjustement range for magnet 112 on rail 113:	b	=	250 mm
adjustment range for magnets 112 on rail 114 in total:	b	=	450 mm

It is of course also possible to arrange not two permanent magnets 112 in common on one rail, but to provide a separate rail for each one of the permanent magnets, with each rail being mounted on the bottom side of the base area 3 of the box 1 facing the vehicle roof D, in such a manner that the base area 3, upon mounting of the box 1 on a vehicle roof D, is adapted to assume a substantially horizontal position by suitably moving the permanent magnets 112 on the rails.

An optimum attachment of the box 1 on a vehicle roof F which is not planar throughout, possibly may already be ensured when only one of the permanent magnets 112 is slidably arranged on a rail and the other permanent magnets are attached to the base area 3 of the box 1 in stationary manner.

It is advisable, furthermore, to attach the permanent magnets 112 on the base area 3 of the box 1 in such a manner that they are spatially movable at least in a restricted manner. This may be effected for each magnet by way of a resilient member, for instance a cylindrical member 115 of rubber which has a restricted diameter in its middle portion. Anchoring of each permanent magnet 112 is effected by means of a bolt 117 extending through the central bore of the member 115, with the associated nut 116 being received in the associated rail 113 or 114 of C-shaped profile. The member 115 is molded onto the permanent magnet 112. The described arrangement is illustrated in Figure 6 by way of example with regard to the mounting of one of the two rear permanent magnets 112 as seen in driving direction, Figure 6 showing a side view of said arrangement in an action along the sectional plane A-A according to Figure 5.

However, coupling of the permanent magnets 112 with the aid of ball-and-socket joints would be conceivable as well.

In the manner described hereinbefore, it is possible to achieve an optimum adaptation of the permanent magnets 112 to an arbitrary vehicle roof, and thus the permanent magnets are capable of developing their maximum holding force.

The length of the edges 6, 7 and 8 extending from the base area 3 of the box 1 in the direction towards the pyramid vertex 5 may also be dimensioned such that they do not have a common point of intersection, but such that their end points which do not constitute the corner points of the

base area 3 constitute the corner points of an area that is substantially parallel thereto. The box 1 thus has in this case the shape of a "cut-off" pyramid.

As a development of this embodiment, mutually parallel edges 6, 7 and 8 may be provided as well.

By doing so, a prism-like body results whose parallel three longitudinal edges advantageously are dimensioned shorter than the side edges of its two triangular faces, and which should have one of its triangular faces facing the vehicle roof D and one of its longitudinal edges oriented in driving direction F. A further possibility is a prism-like body with rhombic horizontal section.

A further embodiment consists in that rail 114 (Figure 4) is split into two rails and that the three rails thus provided extend substantially from the centre of the bottom side of box 1 radially in the direction towards the three corners of the bottom side. The permanent magnets 112 may all be disposed in slidable manner on the respective rail.

I claim:

1. An indicating sign for attachment on the roof of a motor vehicle, consisting of a closed box with indicating symbols and/or indicating inscriptions such as "Taxi", "Police" or the like, characterized in that the box has the shape of a pyramid.

2. An indicating sign according to claim 1, characterized in that one indicating symbol and/or indicating description each is provided on each of the three obliquely upwardly extending side faces of the pyramid-shaped box facing in the operative position the vehicle roof with its base area.

3. An indicating sign according to claim 1 or 2, characterized in that the obliquely upwardly extending side faces are translucent within the outlines of the symbols and/or indicating inscriptions provided thereon, and in that at least one light source is disposed in the interior of the box.

4. An indicating sign according to any one of claims 1 to 3, characterized by an asymmetrical design of the pyramid-shaped box with, as seen transversely of the driving direction, markedly wedge-like profile in that the edge (6) thereof, which in the operative position is oriented in driving direction and extends obliquely upwardly to the pyramid vertex, is longer than the two other edges thereof which also meet in the pyramid vertex.

5. An indicating sign according to any one of claims 1 to 4, characterized in that the box is magnetically

mounted on the vehicle roof, with a gap being left between the base area of the former and the surface of the latter.

6. An indicating sign according to claim 5, characterized by four permanent magnets each arranged on one of the four ends of a double-T-carrier provided on the side of the base area of the box facing the vehicle roof.

7. An indicating sign according to claim 6, characterized in that the connecting beam of the double-T-carrier is designed as a torsion bar.

8. An indicating sign according to claim 5, characterized by three permanent magnets, at least one thereof being arranged on a rail in linearly slidable manner, and at least one rail being provided on the side of the base area of the box facing the vehicle roof.

9. An indicating sign according to claim 8, characterized in that one of the permanent magnets is arranged on a shorter rail and the two other permanent magnets are arranged on a common, longer rail, the shorter rail being disposed substantially parallel to the driving direction of the vehicle and extending from a point near the corner of the base area oriented in driving direction, towards the side edge of the base area located opposite said corner, and the longer rail being disposed substantially at right angles to said rail and parallel to the side edge of the base area facing away from the driving direction.

10. An indicating sign according to claim 8, characterized in that the three permanent magnets are disposed on one rail each, the three rails extending substantially from the center of the box in radially outward direction.

11. An indicating sign according to any one of claims 5 to 10, characterized in that the permanent magnets are mounted on the box in spatially movable manner.

12. An indicating sign according to claim 11, characterized in that resilient members are provided for said mounting in spatially movable manner.

13. An indicating sign according to claim 11 or 12, characterized in that the permanent magnets are each mounted by means of a bolt extending through the central bore of a cylindrical member having in its middle portion a reduced diameter, with the respectively associated nut being received in the associated rail of C-shaped profile.

14. An indicating sign according to claim 11, characterized in that the permanent magnets are mounted on the base area of the box by means of ball-and-socket joints.

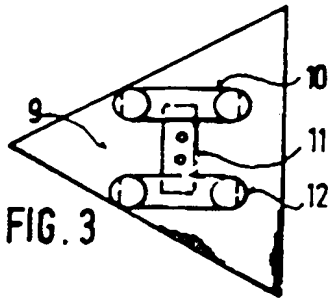


FIG. 3

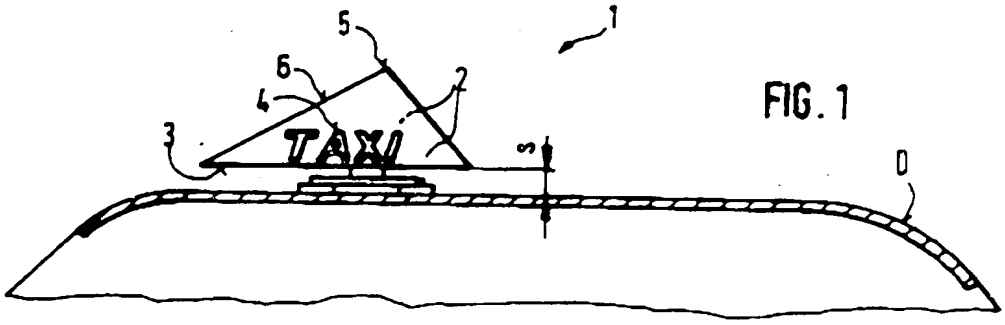


FIG. 1

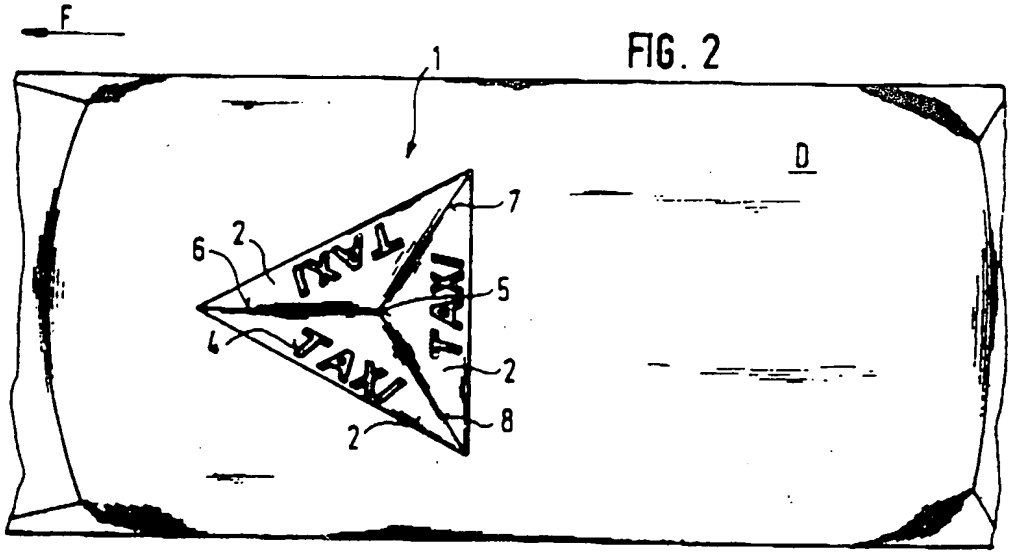


FIG. 2

FIG. 4

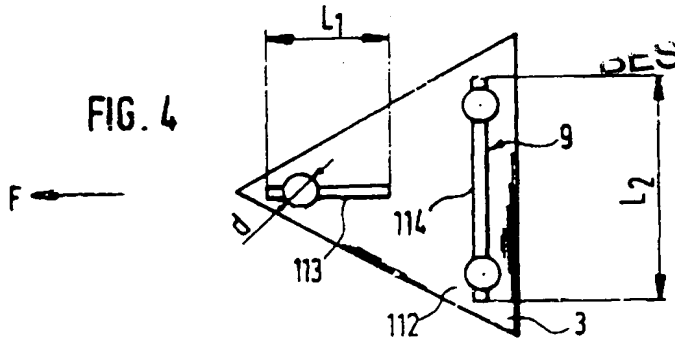
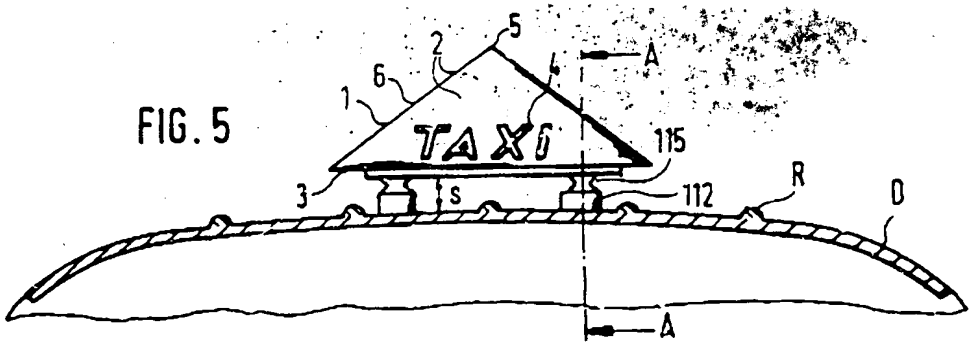


FIG. 5



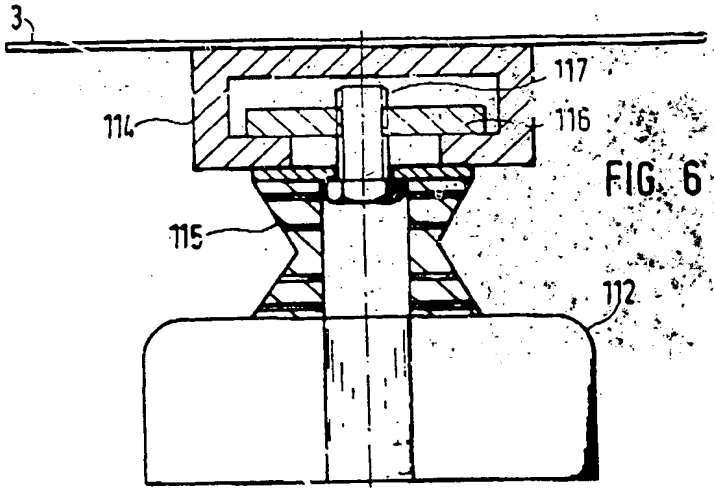


FIG. 6